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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/571,884	07/17/2006	David Morton	478.1080	2682

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EXAMINER	
HAGHIGHATIAN, MINA	
ART UNIT	**PAPER NUMBER**
1616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/571,884	MORTON ET AL.	
	Examiner	Art Unit	
	Mina Haghighatian	1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12 and 18-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12 and 18-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *04/06 & 07/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Receipt is acknowledged of the preliminary amendments filed on 03/13/06. Claims 2-12, 18-20 have been amended and claims 13-17 have been cancelled. New claims 21-28 have been added. Accordingly, claims **1-12 and 18-28** are pending.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 is indefinite for reciting the term "derivatives". The specification does not reasonably disclose the metes and bounds of the term "derivatives" for one of ordinary skill in the art to make and use the invention as claimed. It is further not clear if the derivatives are of peptides or peptides and amino acids.

Claim Objections

The specification does not disclose a fine particle fraction of at least 90% or 99%, which are claimed in claims 5 and 22-23. Since the said limitations have been presented in the original claims, it is required that the said limitations be inserted into the specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2 and 18-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Martin et al (DE 10130449).

Martin et al teach intake of sedatives and hypnotics such as **benzodiazepines** by means of **inhalation** in the human respiratory tract for medicinal purposes, i.e. for treatment of symptoms that can be treated with benzodiazepines. This includes prophylactic, diagnostic and after-care (see page 5 [0015]). The inhalable formulations can be administered by fine mist aerosol or **dry powder** inhalator (see [0016]).

Benzodiazepines including diazepam, have a central, muscle-relaxing or myotonolytic and anticonvulsive effects. Due to sleep-inducing components, the benzodiazepines constitute a major part of hypnotics (see page 3, [0005] and [0006]).

Claims 1-4, 6-12, 18-21 and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Bartus et al (6,514,482).

Bartus et al teach a method of treating a disorder of the central nervous system. The method includes administering to the respiratory tract of a patient particles comprising an effective amount of a medicament. The particles have an aerodynamic diameter between about 1 and about 5 microns. The administration is by a **dry powder** inhaler or by a metered dose inhaler (see col. 3, lines 24-30, 47-50 and 61-64). The medicaments include benzodiazepines such as diazepam, **clonazepam**, lorazepam, etc (see col. 5, lines 50-67; col. 6, lines 1-5, 28-34, 62-67; col. 7, lines 11-15).

Bartus also discloses that the particles may include one or more **phospholipids** such as phosphatidylglycerol (see col. 8, lines 49-55). The particles may contain an **amino acid** such as leucine, cysteine, glycine, etc (col. 9, line 64 to col. 10, line 5). The particles may also include a material such as **lactose**, inorganic compounds, phosphates, etc (see col. 11, lines 50-54). Particles preferably have an MMAD of between 1 and 5 microns, and more preferably from 1 to 3 microns (see col. 12, lines 29-35). It is further disclosed that the powders have a fine particle fraction is below 5.6 microns and below 3.4 microns (col. 20, lines 27-32).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 5 and 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bartus et al (6,514,482) in view of Maa et al (6,284,282).

Bartus et al, discussed above, discloses dry powder formulations comprising benzodiazepines for treating acute panic disorders, seizures, etc. Bartus et al, however, lacks specific disclosure on the percentage of fine particle fractions in the composition.

Maa et al, discloses spray freeze dry preparation of dry powder formulations of therapeutic proteins suitable for administration via pulmonary delivery (see abstract and col. 2, lines 28-44). The powders are characterized on the basis of their fine particle fraction (FPF). The said spray-dried particles have a FPF of at least 10%, with at least about 20% and most preferred in the order of 40 to 50% (see col. 5, line 57 to col. 6, line 3). Table 3 discloses FPFs of certain particles, and DNase/trehalose 80/20 shows a FPF of about 73%. It is further disclosed that certain excipients such as amino acids,

lactose or magnesium stearate are added in an amount from about 1 to about 95% and most preferably less than 5% (see col. 8, lines 7-50).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed the teachings of Maa et al on the fine particle fraction of dry powder particles of active agents for pulmonary delivery, in the formulations of dry powder particles comprising active agents such as benzodiazepines of Bartus et al because it is disclosed that FPF is a measure of the aerosol performance of a powder, with the higher the fraction the better. In other words, all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bartus et al (6,514,482) in view of Musa et al (US 20040096516).

Bartus et al, discussed above, lacks specific disclosure on the particle size of carrier particles.

Musa et al teaches modified carrier particles for use in dry powder inhalers. The carrier particles may be lactose or an acceptable salt thereof. Advantageously, the

diameter of the carrier particles lies between 20 and 1000 microns, preferably from 90 to 150 microns (see [0041]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed the teachings of Musa et al on the particle size of the carrier particles for pulmonary delivery, in the formulations of dry powder particles comprising active agents such as benzodiazepines of Bartus et al because it is disclosed that larger carrier particles are suitable because they will not be delivered to the alveoli and thus the delivered dose is mostly the active agents and not the excipients. In other words, all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim **1** is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 6 of copending Application No. 10/570,937 (US 20070043030). Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claim would have been anticipated by the reference claim. In other words, claim 1 is generic to all that is recited in reference claim 6. Both claims recite a pulmonary formulation comprising benzodiazepine.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims **1-12 and 22-28** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 16-17, 21-24, 27-33 and 39-42 of copending Application No. 10/571,146 (US 20060257491). Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims would have been obvious over the reference claims. Specifically, the instant claims are drawn to a formulation for pulmonary delivery comprising benzodiazepines. The depending claims are drawn to FPFs of the particles,

excipients and carrier particles. The reference claims are drawn to a pharmaceutical composition comprising composite active particles for pulmonary inhalation. The difference is that the reference claims broadly disclose an active agent, while the instant claims are drawn to a benzodiazepine.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mina Haghighatian whose telephone number is 571-272-0615. The examiner can normally be reached on core office hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Mina Haghighatian
Patent Examiner
December 26, 2007